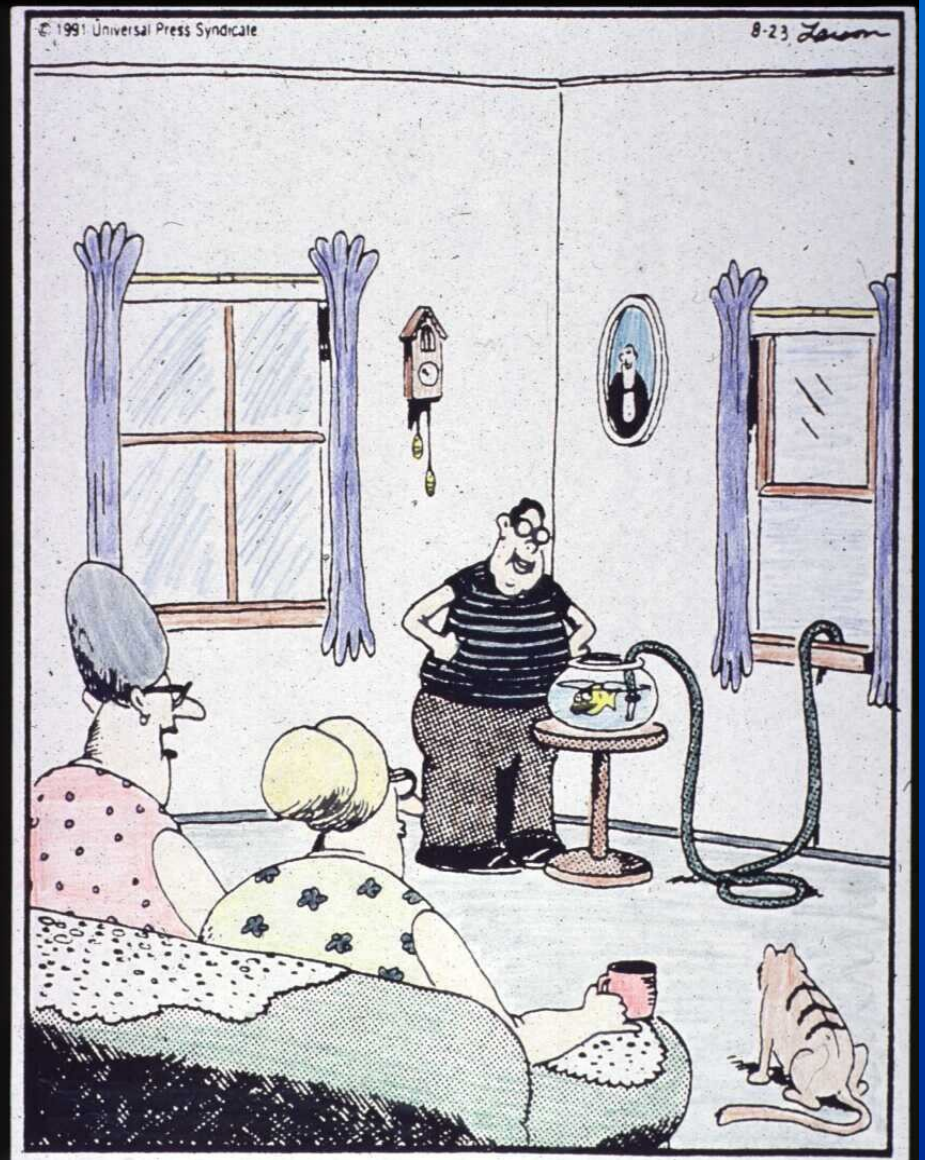
South Florida Ecosystem Restoration Overview

Partnering Session
June 2002

CENTRAL & SOUTHERN FLORIDA PROJECT

COMPREHENSIVE EVERGLADES RESTORATION PLAN



"Oh, there goes Lenny again — draining off the goldfish bowl. . . . He wants to one day work for the Army Corps of Engineers, you know."

South Florida Ecosystem Restoration Overview

Topics

- Background and Historical Perspective
- The Restudy Effort
- The Comprehensive Plan
- Outreach and Public involvement

EVERGLADES
NATIONAL
PARK

“There are no other Everglades in the world.”

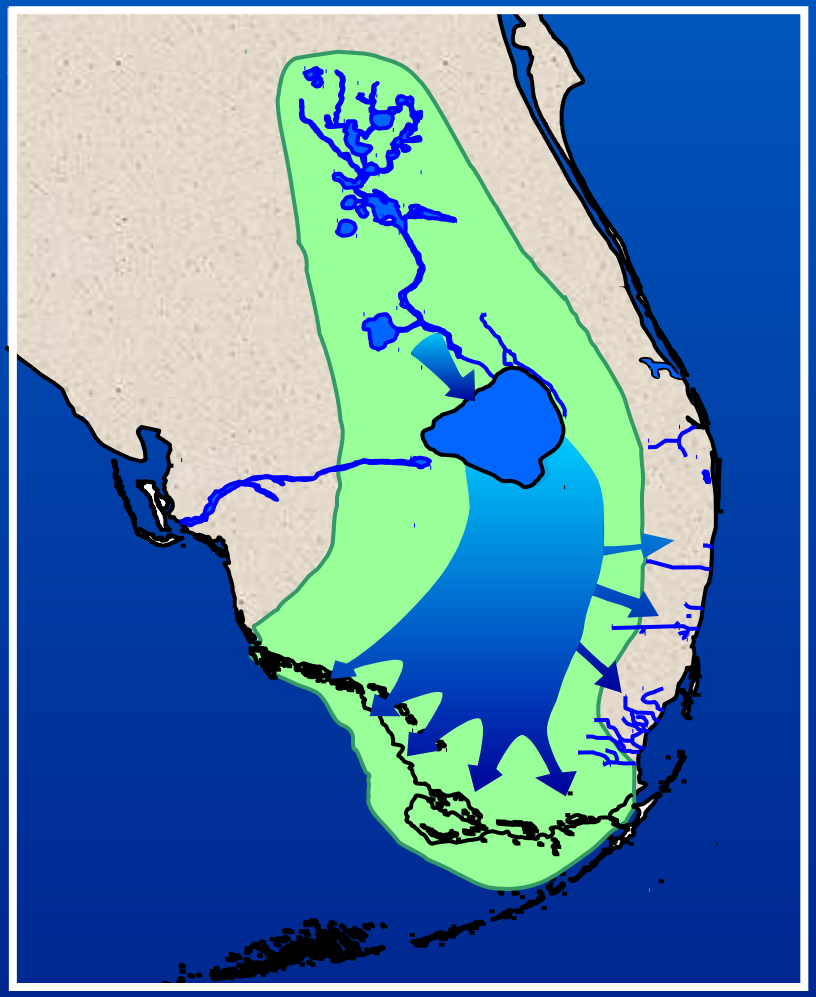
-Marjory Stoneman Douglas

South Florida Ecosystem

- Area - 18,000 square miles
- Population today ~ 6 million

The “Original” Everglades Ecosystem

“River of Grass”

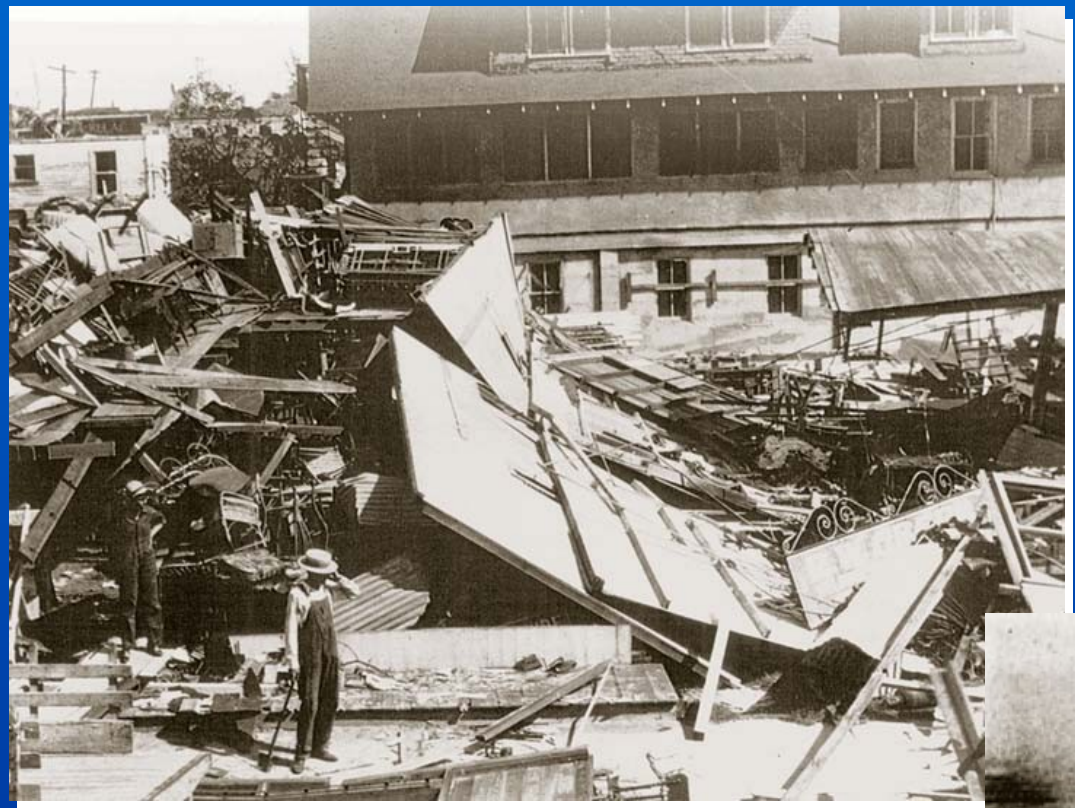


- Large spatial scale
- Large seasonal and annual variability in rainfall
- Subtle, but broad topographic gradients
- Dynamic water storage
- Sheet flow
- Organic & marl soils

MID 1800s

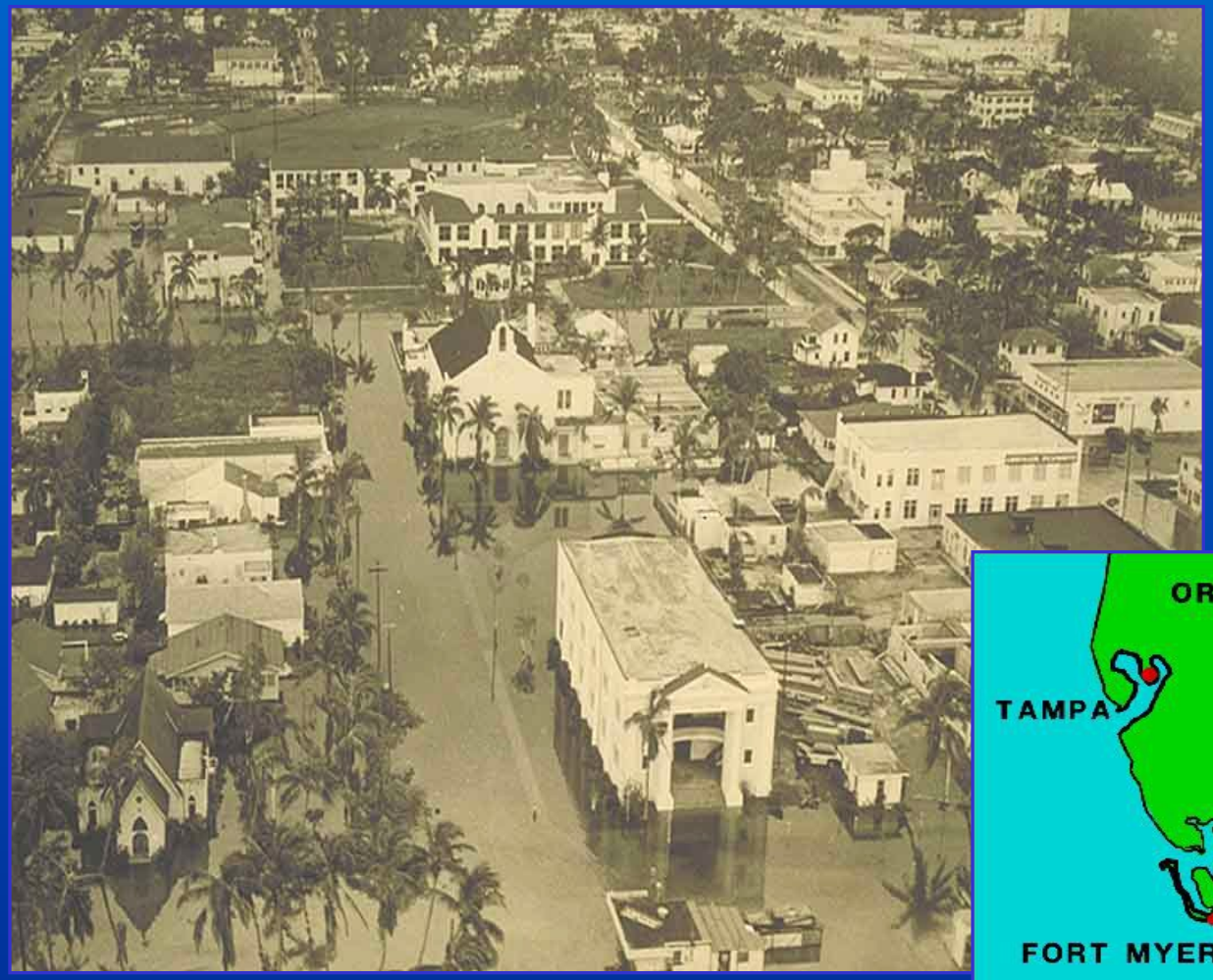
GRAND VISIONS

EXTENSIVE AGRICULTURAL
DEVELOPMENT OF MUCK LANDS



Hurricanes in 1926 and 1928

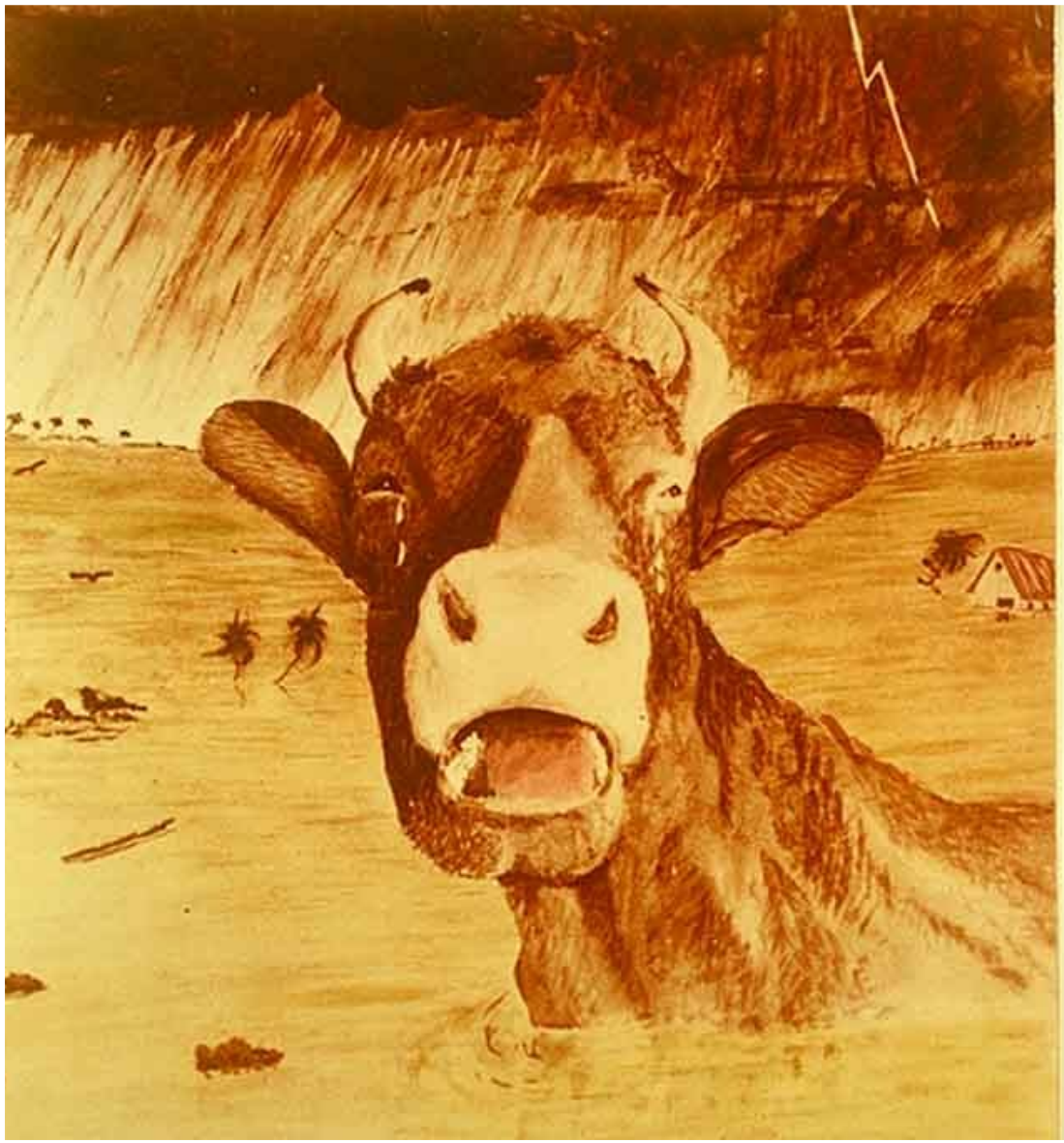
Muck Fires in the 1930s



KISSIMMEE

ORLANDO
KISSIMMEE CHAIN OF LAKES
CAPE CANAVERAL
TAMPA
TAYLOR CREEK
STUART
LAKE OKEECHOBEE
CALOOSAHATCHEE RIVER
PALM BEACH
FORT MYERS
MIAMI
EVERGLADES NATIONAL PARK
FLORIDA BAY
FLORIDA KEYS
FLOODED AREAS IN 1947

1947 Flood



TENTATIVE
REPORT
OF

FLOOD DAMAGE

FLORIDA
EVERGLADES
DRAINAGE
DISTRICT

1947

80th Congress, 2d Session - - - - - - House Document No. 643

COMPREHENSIVE REPORT ON CENTRAL AND SOUTHERN FLORIDA FOR FLOOD CONTROL AND OTHER PURPOSES

LETTER

FROM

THE SECRETARY OF THE ARMY

TRANSMITTING

A LETTER FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, DATED FEBRUARY 19, 1948, SUBMITTING A REPORT, TOGETHER WITH ACCOMPANYING PAPERS AND ILLUSTRATIONS, ON A PRELIMINARY EXAMINATION AND SURVEY OF, AND A REVIEW OF REPORTS ON, RIVERS, LAKES, AND CANALS OF CENTRAL AND SOUTHERN FLORIDA FOR FLOOD CONTROL AND OTHER PURPOSES, MADE PURSUANT TO CONGRESSIONAL AUTHORIZATIONS

May 6, 1948.—Referred to the Committee on Public Works and ordered to be printed, with five illustrations

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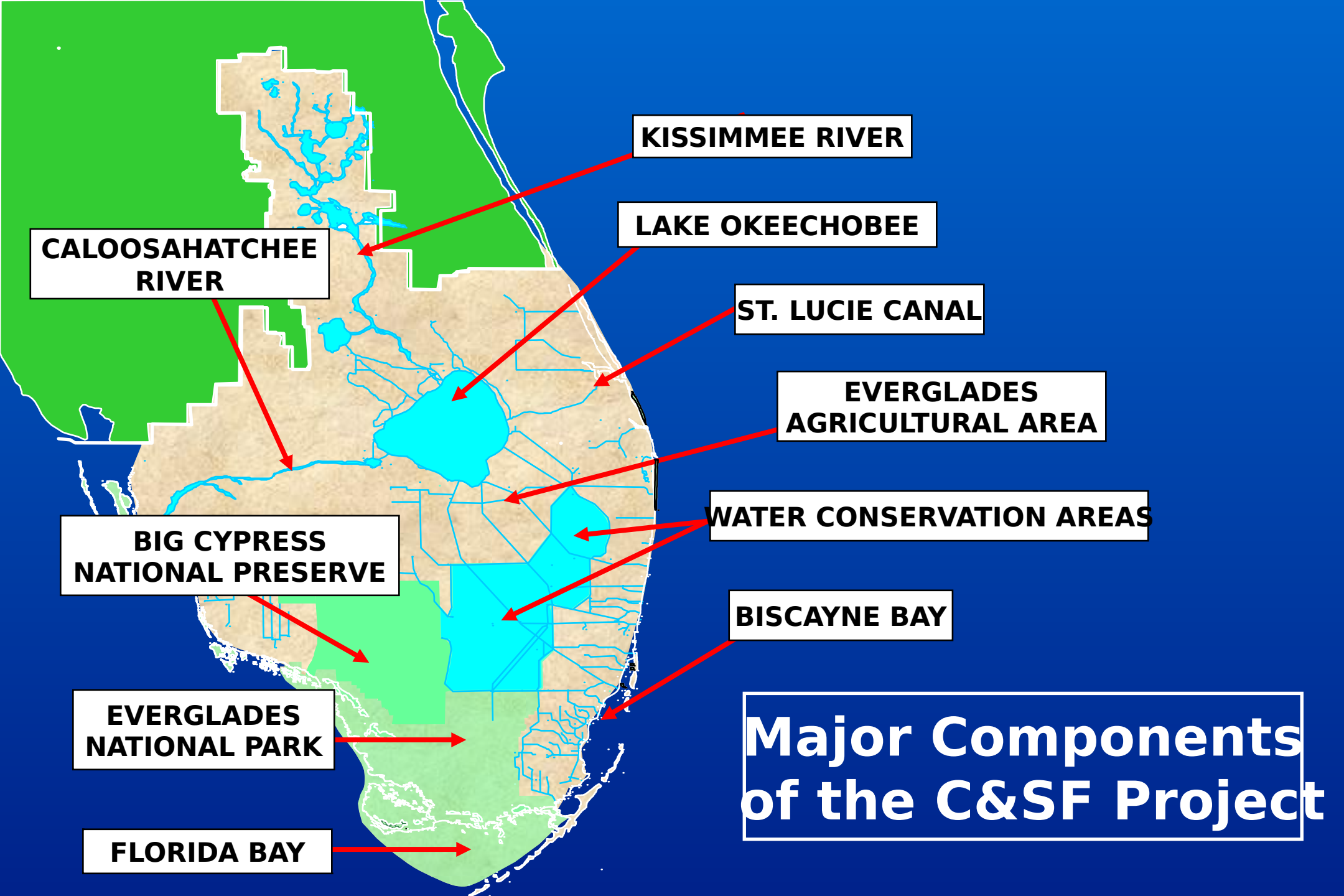
UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1948

9245

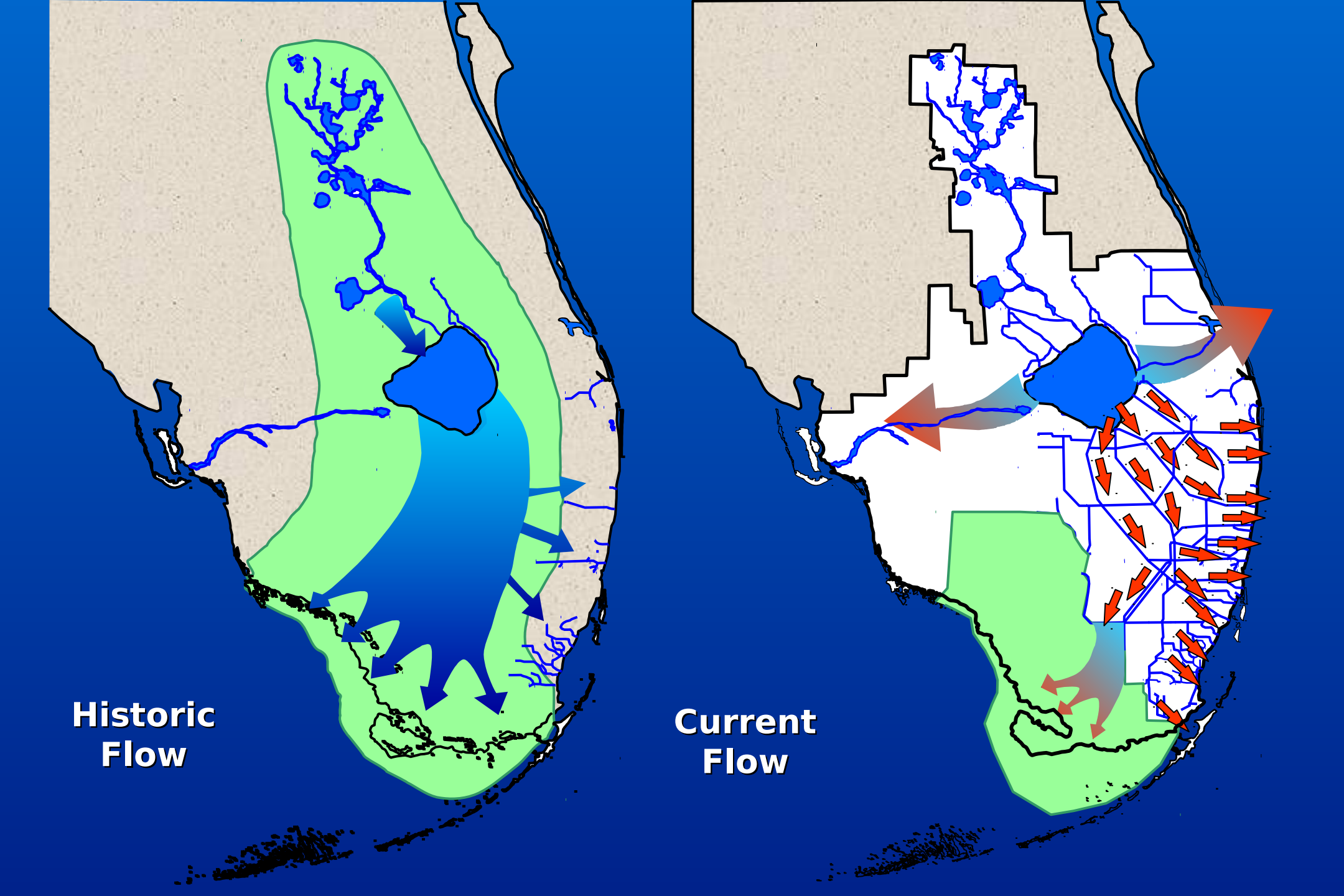
The Central and Southern Florida (C&SF) Project

- **Project Purposes:** Flood control, water conservation and control, regional water supply, prevention of salt water intrusion, fish and wildlife conservation, and water supply to Everglades National Park

- **Project includes:** 10 locks, 1,000 miles of canals, 720 miles of levees, over 150 water control structures, and 16 pump stations


KISSIMMEE RIVER
LAKE OKEECHOBEE
CALOOSAHATCHEE RIVER
ST. LUCIE CANAL
EVERGLADES AGRICULTURAL AREA
WATER CONSERVATION AREAS
BIG CYPRESS NATIONAL PRESERVE
BISCAYNE BAY
EVERGLADES NATIONAL PARK
FLORIDA BAY
Major Components of the C&SF Project

Extensive changes in the south Florida landscape after 1948


Historic
Flow
Current
Flow

An Ecosystem in Trouble….

- Too much/too little water for the Everglades/south Florida ecosystem
- Massive reductions in wading bird populations
- Degradation of water quality
- Repetitive water shortages and salt water intrusion
- Declining estuary health
- 1.7 billion gallons of

Key Tenet of South Florida Ecosystem Restoration:

Hydrologic restoration is a necessary starting point for ecological restoration

The Restudy Effort

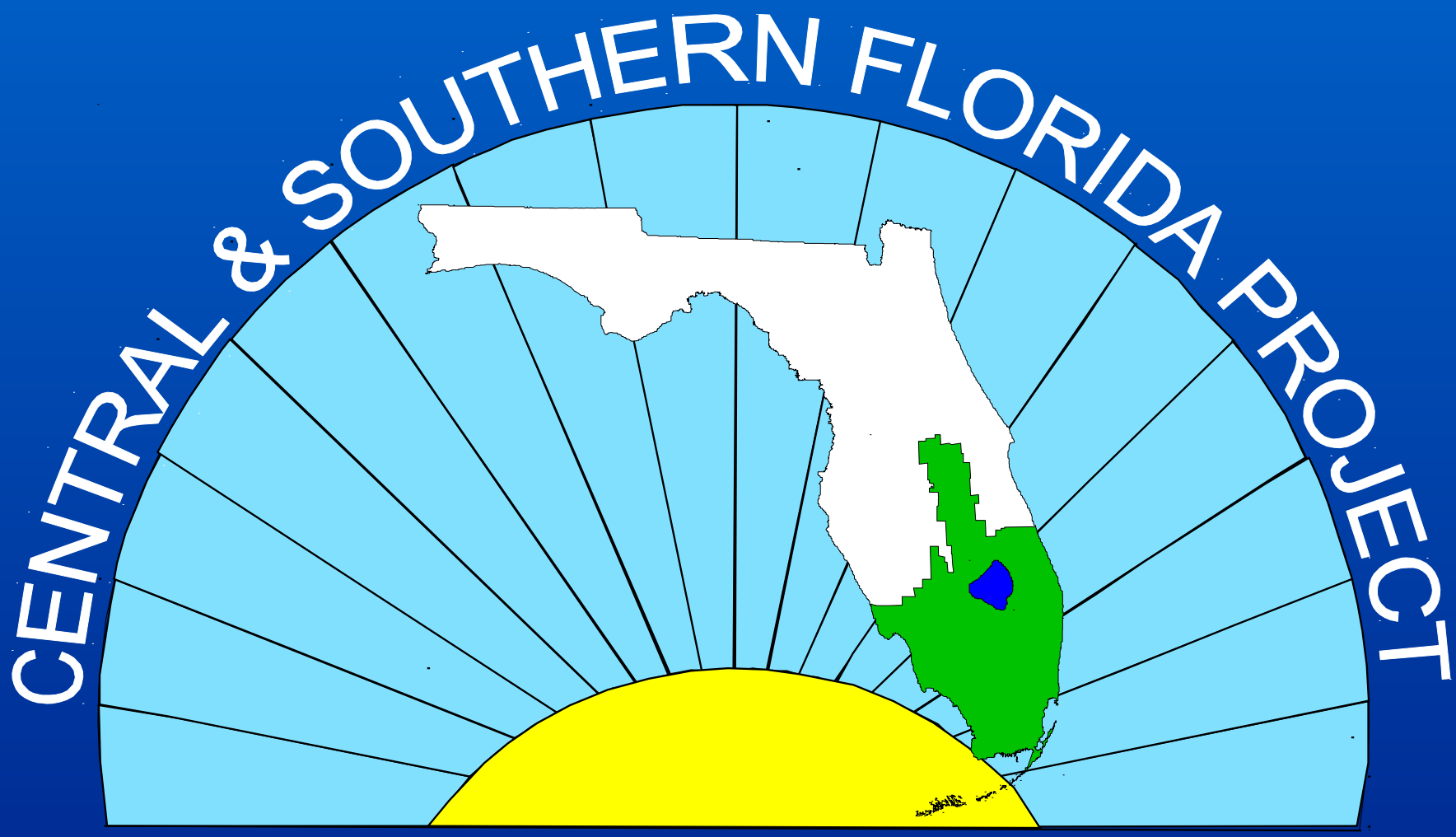
South Florida Ecosystem Restoration

C&SF Project Comprehensive Review Study (The Restudy)

- Study authorized by Congress in 1992
- Reexamination of C&SF Project to:
  - Restore south Florida ecosystem
  - Enhance water supplies
  - Maintain flood control
- Restudy initiated June 1993

Restudy Approach - Not Business As Usual

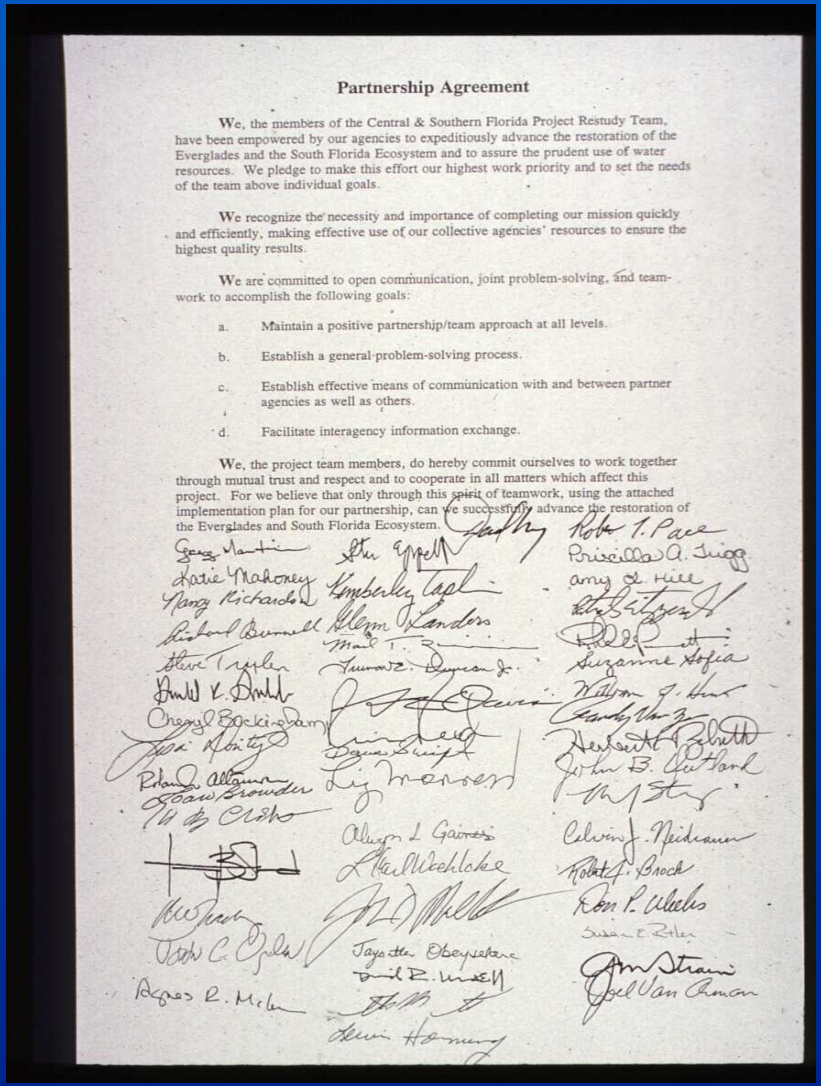
- Complexity of problems
- Need for ecosystem perspective
- Conflicting agency responsibilities
- Intense public interest



COMPREHENSIVE REVIEW STUDY

Interagency Team

- Army Corps of Engineers
- South Florida Water Management District
- Federal Agencies
- State Agencies
- Miccosukee and Seminole Tribes
- Local Governments



Partnership Agreement

We, the members of the Central & Southern Florida Project Restudy Team, have been empowered by our agencies to expeditiously advance the restoration of the Everglades and the South Florida Ecosystem and to assure the prudent use of water resources. We pledge to make this effort our highest work priority and to set the needs of the team above individual goals.

We recognize the necessity and importance of completing our mission quickly and efficiently, making effective use of our collective agencies' resources to ensure the highest quality results.

We are committed to open communication, joint problem-solving, and team-work to accomplish the following goals:

a. Maintain a positive partnership/team approach at all levels.

b. Establish a general problem-solving process.

c. Establish effective means of communication with and between partner agencies as well as others.

d. Facilitate interagency information exchange.

We, the project team members, do hereby commit ourselves to work together through mutual trust and respect and to cooperate in all matters which affect this project. For we believe that only through this spirit of teamwork, using the attached implementation plan for our partnership, can we successfully advance the restoration of the Everglades and South Florida Ecosystem.

Agency

WEEKLY WORLD
NEWS
$1.25 U.S. $1.39 CANADA/70p U.K.
May 27, 1997
Is Jesus back on Earth?
Thousands of eyewitnesses say YES!
HALF-ALLIGATOR HALF-HUMAN KILLS MIAMI MAN — and escapes from laboratory!
DR. ANTOINE PEEVON was eaten alive by the bizarre creature.
Restudy Biodiversity Experiment Goes Awry!

Water Resources Development Act of 1996

" The Secretary shall develop, as expeditiously as practicable, a proposed comprehensive plan for the purpose of restoring, preserving, and protecting the South Florida ecosystem. The comprehensive plan shall provide for the protection of water quality in, and the reduction of the loss of fresh water from, the Everglades. The comprehensive plan shall include such features as are necessary to provide for the water-related needs of the region, including flood control, the enhancement of water supplies, and other objectives served by the Central and Southern Florida Project."

“Looking up at the guillotine sharpens the imagination”

- Norman Augustine

COMPREHENSIVE PLAN
CENTRAL & SOUTHERN FLORIDA PROJECT
COMPREHENSIVE REVIEW STUDY
JULY 1, 1999
YES, WE CAN!!

"The Everglades

are an American treasure, and saving them must be a national priority."

Vice President Al Gore

COMPREHENSIVE PLAN
CENTRAL & SOUTHERN FLORIDA PROJECT
COMPREHENSIVE REVIEW STUD
JULY 1, 1999
DID!!
YES, WE CAN!!

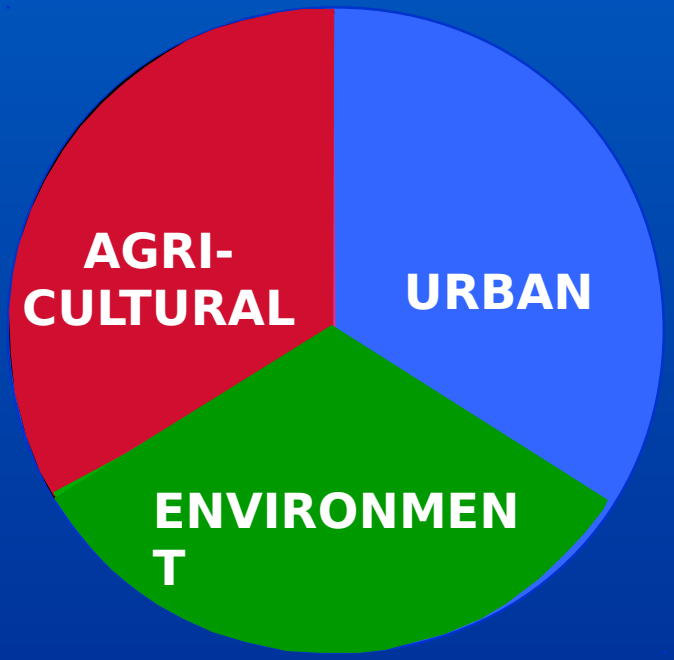
The Comprehensive Plan

South Florida Ecosystem Restoration

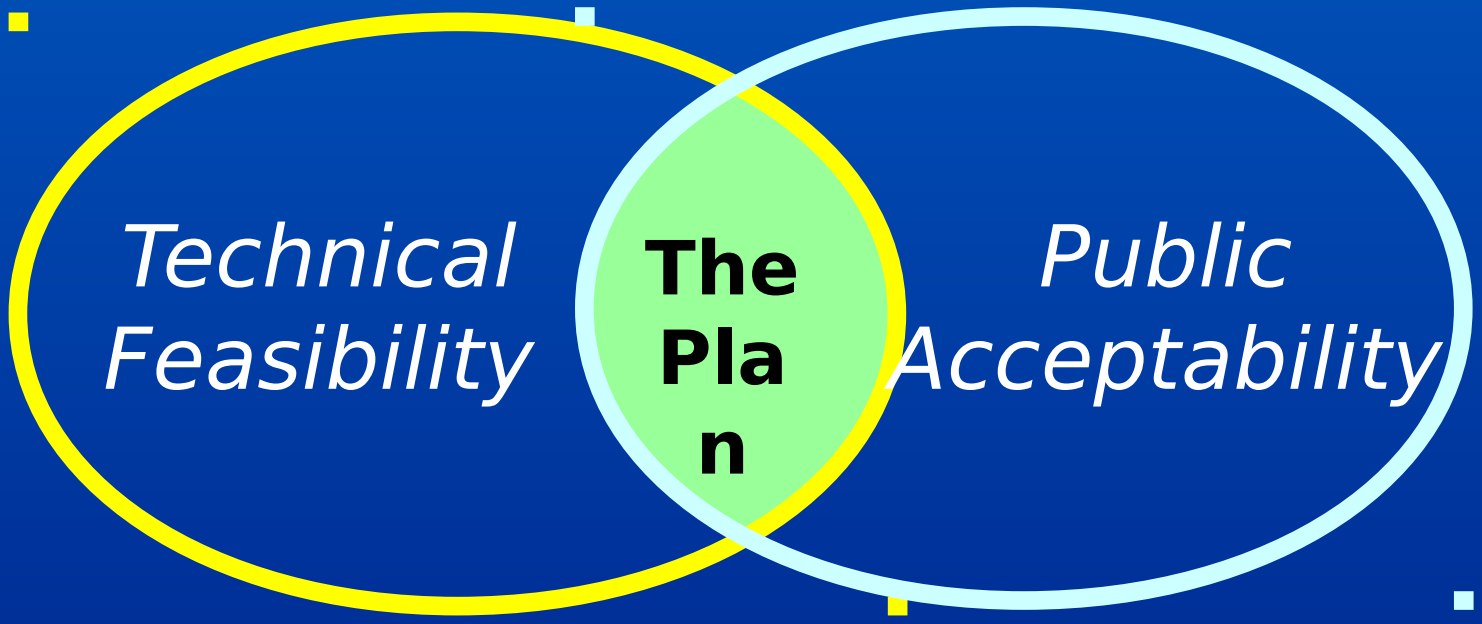
“Whiskey’s for drinking, water’s for fighting over”

- Attributed to Mark Twain

Water Use Sectors



Developing An Implementable Plan

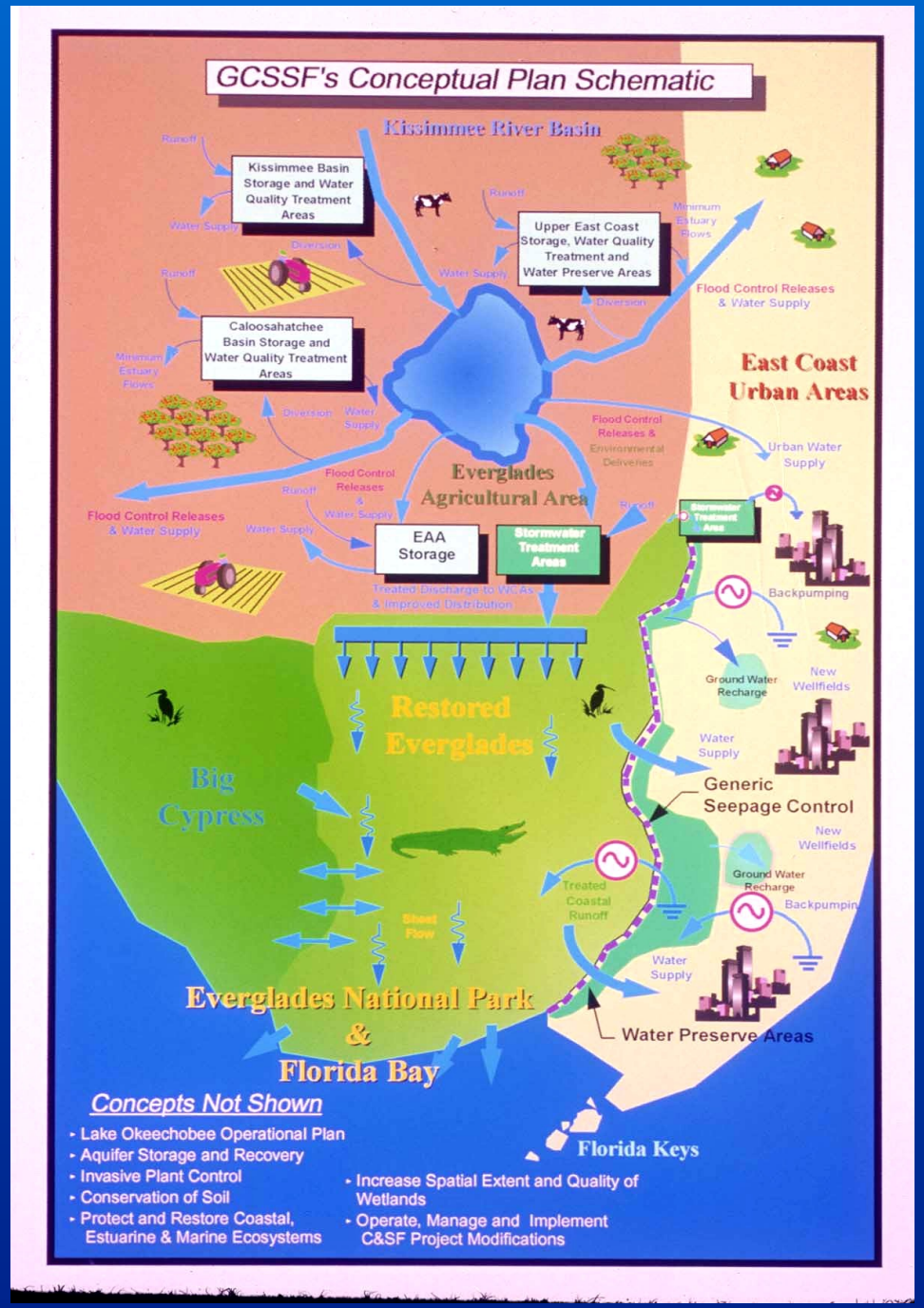


Governor's Commission for a Sustainable South Florida

- Result of Executive Order by Governor Lawton Chiles in March 1994
- 47 member Commission representing agriculture, business, public interest and environmental organizations, and government
- Included 5 ex-officio non-voting federal members

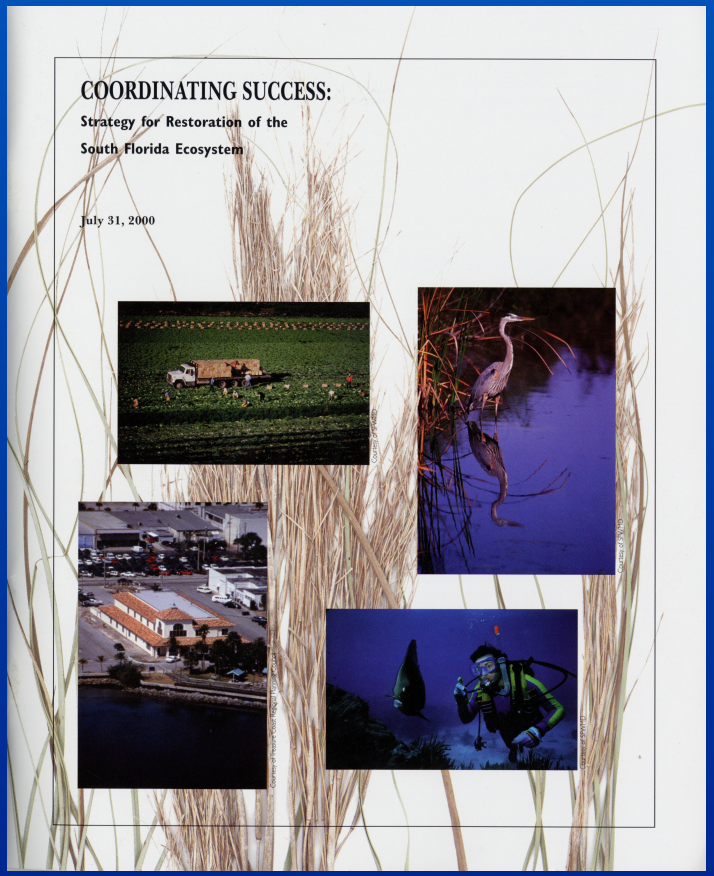
Governor's Commission Role in the Restudy

- Initial Report completed in September 1995
- Conceptual Plan completed August 1996
- August 1998 Interim Report on the Restudy
- Restudy Plan Report completed in January 1999


GCSSF's Conceptual Plan Schematic
Kissimmee River Basin
Kissimmee Basin Storage and Water Quality Treatment Areas
Upper East Coast Storage, Water Quality Treatment and Water Preserve Areas
Caloosahatchee Basin Storage and Water Quality Treatment Areas
East Coast Urban Areas
Everglades Agricultural Area
EAA Storage
Stormwater Treatment Areas
Restored Everglades
Big Cypress
Everglades National Park & Florida Bay
Florida Keys
Water Preserve Areas
Generic Seepage Control
Backpumping
Ground Water Recharge
New Wellfields
Urban Water Supply
Flood Control Releases & Water Supply
Concepts Not Shown
Lake Okeechobee Operational Plan
Aquifer Storage and Recovery
Invasive Plant Control
Conservation of Soil
Protect and Restore Coastal, Estuarine & Marine Ecosystems
Increase Spatial Extent and Quality of Wetlands
Operate, Manage and Implement C&SF Project Modifications

South Florida Ecosystem Restoration Task Force

- Initially established in 1993 as federal interagency partnership
- WRDA 1996 authorized task force, membership, and duties
- 14 members from federal, state, tribal, and local governments
- Coordinates development of policies, strategies, etc.
- Florida based Working Group consisting of 22 agencies



Task Force/Working Group Role in the Restudy

- Science Sub-Group Report
- Resolved policy issues and conflicts between agencies
- Provided Secretary of the Army with recommendations on the comprehensive plan

Getting the Water Right

CERP Components

Surface Water Storage Reservoir

Aquifer Storage & Recovery

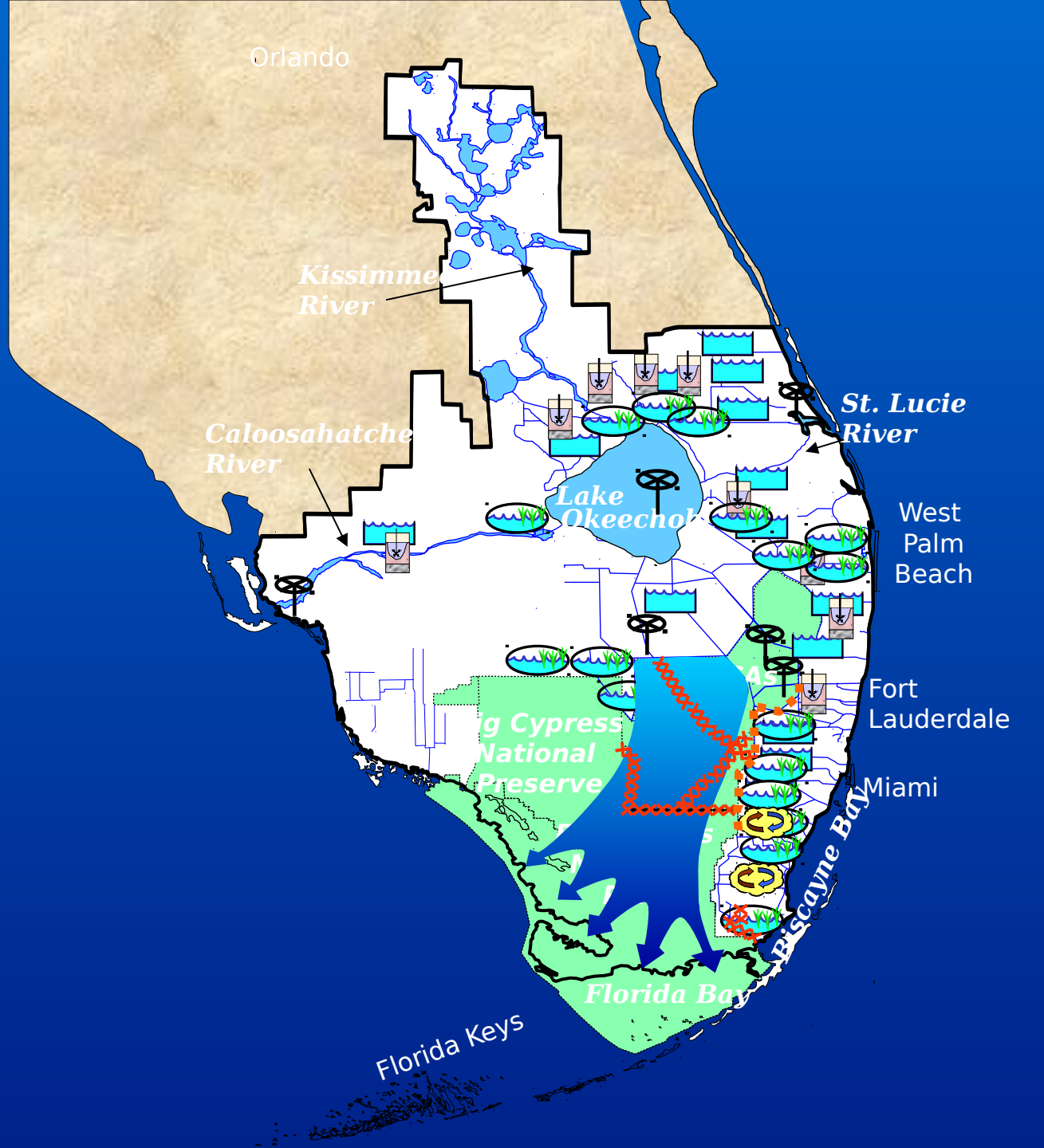
Stormwater Treatment Areas (STAs)

Reuse Wastewater

Seepage Management

Removing Barriers to Sheetflow

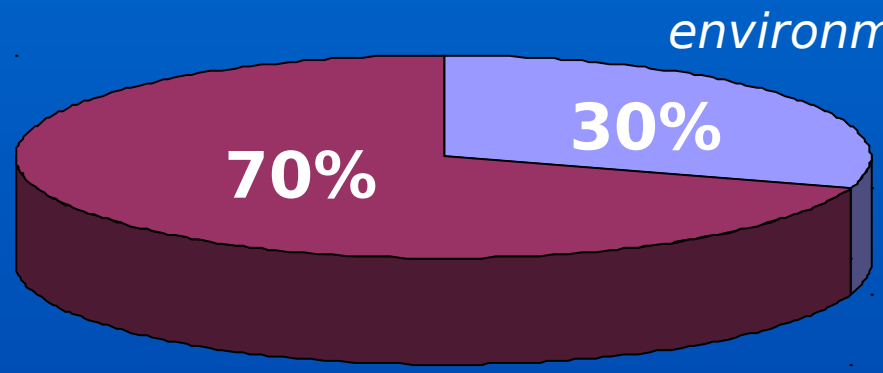
Operational Changes



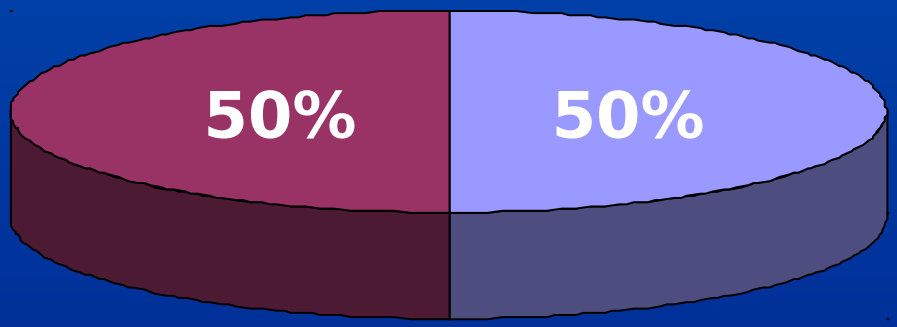
How Much?....Who Pays?

- $7.8 billion (1999 price levels) over 30+ years to implement
- $172 million each year to operate & maintain

Enlarging the Water Pie



Current Deliveries:
1,200,000 acre-feet



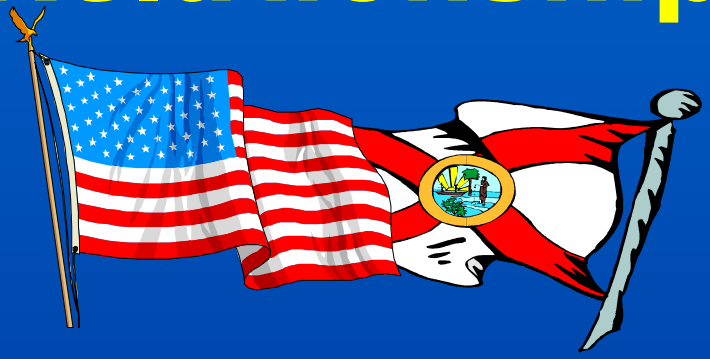
Deliveries with CERP:
2,400,000 acre-feet

YWCA

WRDA 2000 - Everglades Provisions

- Approval of plan as framework for modifications to C&SF Project
- 4 Pilot Projects (2 previously authorized)
- Initial Projects - $1.2 Billion estimated cost, including adaptive assessment
- Programmatic Authority - $206 million total cost
- Projects in Plan not authorized in WRDA 2000 will require future authorization by Congress
- Other provisions address cost sharing, assurances, independent scientific review, and reports to Congress

New Corps/Sponsor Relationship



- CERP is being developed in *Partnership* with several non-Federal sponsors, the primary ones being the SFWMD and the State of Florida
- Program is cost shared 50-50
- Sponsor provides all lands, easements, and rights of way
- Sponsor may provide their share of costs through in-kind work, including construction

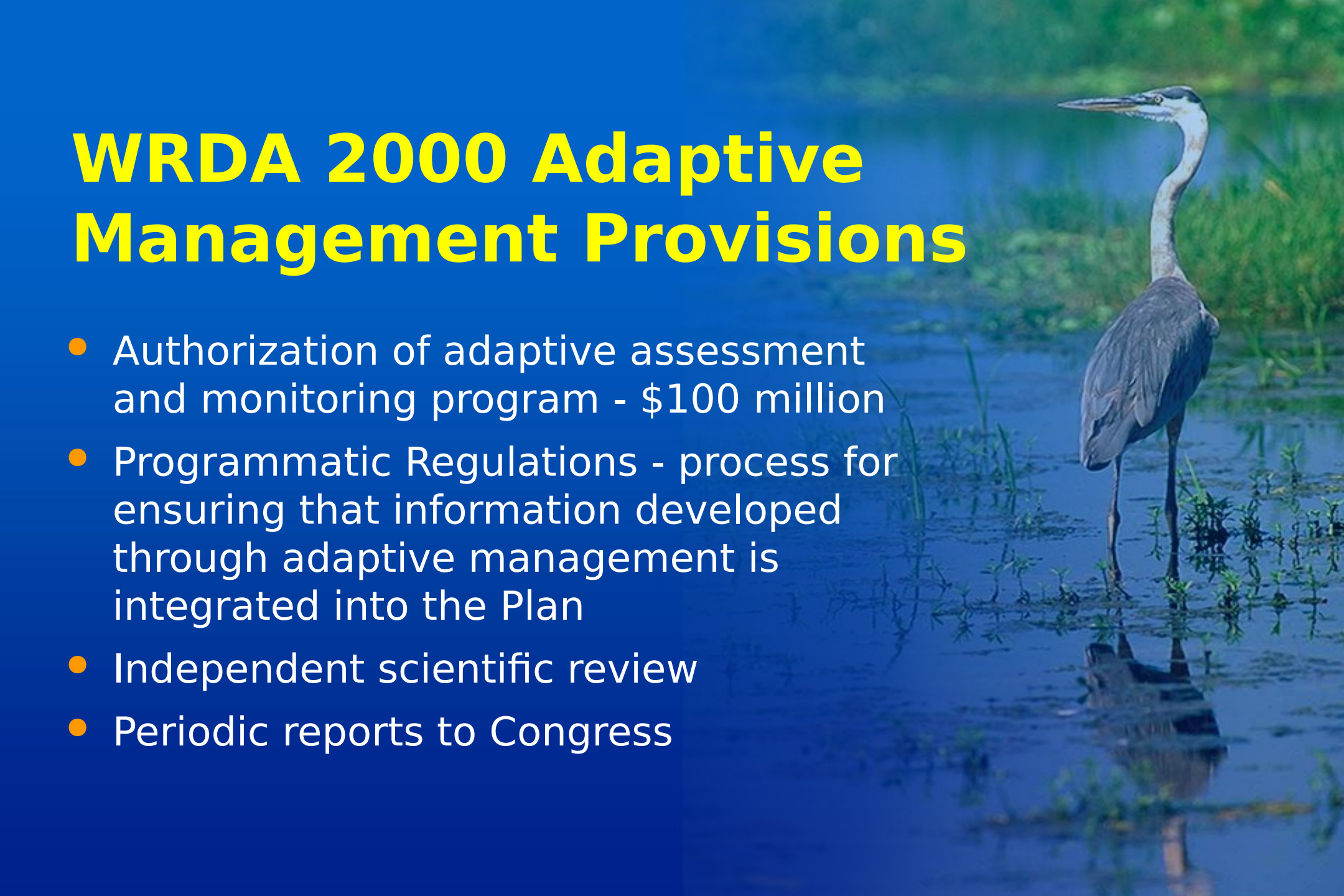
Adaptive Management - the key to CERP implementation

"The Committee does not expect rigid adherence to the Plan as it was submitted to Congress. This result would be inconsistent with the adaptive assessment principles in the Plan....Instead the Committee expects that the agencies....will seek continuous improvements of the Plan based on new information, improved modeling, new technology and changed circumstances."

Senate Committee on Environment and Public Works
July 27, 2000

WRDA 2000 Adaptive Management Provisions

- Authorization of adaptive assessment and monitoring program - $100 million
- Programmatic Regulations - process for ensuring that information developed through adaptive management is integrated into the Plan
- Independent scientific review
- Periodic reports to Congress



Assurance of Project Benefits

- Agreement between President and Governor
- Programmatic Regulations within 2 years to ensure goals and purposes of Plan are achieved
- Project Specific Assurances
  - Project Implementation Reports
  - Project Cooperation Agreements
  - Operating Manuals
- Savings Clause
  - Transfer or elimination of existing legal sources
  - Maintenance of flood protection
  - No effect on Seminole Tribal compact

President and Governor Executive Agreement

Agreement January 9, 2002

....State shall ensure, by regulation or other appropriate means, that water made available by each project in the Plan shall not be permitted for a consumptive use or otherwise made unavailable by the State until such time as sufficient reservations of water for the restoration of the natural system are made under State law in accordance with the project implementation report for the project and consistent with the Plan

Outreach and Public Involvement

South Florida Ecosystem Restoration

Plan Total Pou Restorasyon Everglades

Paj Done

Plan Ekzak-la:

- Li ap amélyoré condisyon 2.4 milyon karo tè nan écosistèm Sid Florid-la, Everglades é Biscayne National Park ladann tou.
- Li ap amélyoré condisyon Lak Okeechobee
- Li ap éliminé dlo ki ap domajé ouvèti koté rivyè-a rancontré avèk lanmè-a (Yo rélé pati sa-a Ambouchu ou byen éstwè)
- Li ap amélyoré distribisyon dlo nan Sid Florid la ak nan Biscayne Bay
- Li ap amélyoré kalité dlo-a
- Li ap ogmanté rézèvwa dlo-a tou, é métè pwotéksyon kont inondasyon

Ki sa ou dwe konnen:

- Ekosistem Everglades ak Sid Florid-la chanjé ampil
- Everglades pa résévwa tout kantité ak kalité dlo li bézwen, ni lè li bézwen li
- Si nou pa aji kounyè-a,
  -Kondisyon Everglades-la ak Lak Okeechobee pral bésé é vin pi mal
  -You kantité plant ak zanimo kap viv nan Sid Florid-la pral kontinwé disparèt
  -Kalité dlo-a ki andan ak bò lanmè Sid Florid-la pral détéryoré
  -Ap genyen plis raté dlo nan vil-yo é nan zòn agrikilti pi souvan

Otréfwa, Florida Everglades la té you rivyè zèb byen fré é énèjétik ki tap koulé alez, é ki té bay dlo doux ki sòti dépi nan Lak Okeechobee pou rivé jis nan Bè Florid-la. Li koulé pou li awozé tout tè, jaden, pyé bwa é li ba nou é zanimo-yo dlo pou nou bwè tou, yo rélé fénomèn sa-a **ékosistem**. Jodi-a, ékosistem ékstròdiné sa-a ap disparèt. Pandan dènyé 50 an yo, santé ak grosè Everglades-la ap bésé san rété. Akoz drénaj ak dévlopman, Everglades nan jounin jodi-a ap soufri paské manké dlo prop disponib pou fè tout travay sa yo.

Pou nou ka prézèvé anvironman natirel Sid Florid-la, ak ogmanté dlo nan zòn nan é métè pwotéksyon kont inondasyon tou, Kò Enjényè Lamé Ameriken (U.S. Army Corps of Engineers) pral asosyé avek South Florida Water Management District pou dévlopé you plan pou kimbé Everglades-la an plen fòm. Sé sa yo rélé **Plan Total Réstorasyon Everglades**-la. Gen you séri de amélyorasyon ékolojik ak nan sistèm idrolik-latak tiyo tou) ki pral pran plis ké 20 tan pou yo ranjé. Sé you plan ki pral kouté 7.8 bilyon dola é sé gouvènman fédéral ak éta Florid la ki pral patajé dépans sa-a égalégo.

Everglades d'Amérik la sé you trézo nasyonal é nanpwen tankou li. Pou nou sové li, fòk nou aji kounyè-a. **Plan Total pou Restorasyon Everglades**-la pèrmèt nou kapté bon dlo ké nou-ap pédi nan lanmè-a. Sé dlo sa-a kap asiré nou yo anvironman ki mennen bon santé é you ékonomi solid pou nou ak pou tout lòt jénérasyon yo ka aprécié li é jwi li pou tout tan.

Kouman Plan Total pou Réstorasyon Ever

- Li ap amélyoré kalité ak kantité dlo pou bwè ak pou
- Li ap kréyé you bon anvironman pou nou ak tout zar
- Li ap diminwé rasyonman dlo-a
- Li ap édé réstoré bèl mèvèy anvironman natirel Sid Florida defason pou nou ak tout fanmi nou é lòt jénérasyon yo ka aprécié li é jwi li pou tout tan.

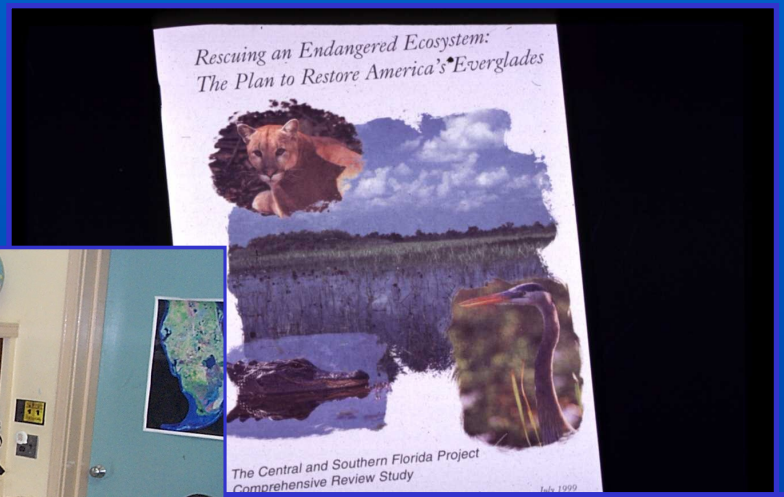
Sa pou fè pou édé kounyè-a:

- Konsèvé dlo la kay nou (pa ékzanp, lè ou-a dlo-a, ou byen pa gaspiyé dlo-a)
- Shaché konin infòmasyon sou Everglades-l kimbé-l an fòm.
- Gayé kozé-a nan kominoté-a
- Envité manm South Florida Water Manages you prézantasyon nan kominoté-nou ou by Téléfoné nou nan: **1-877-GLADES1 (1-877** mesaj elektronik nan adres sa-a: **theresa.e.v**

Ki koté ou ka pran plis enfòma

U.S. Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

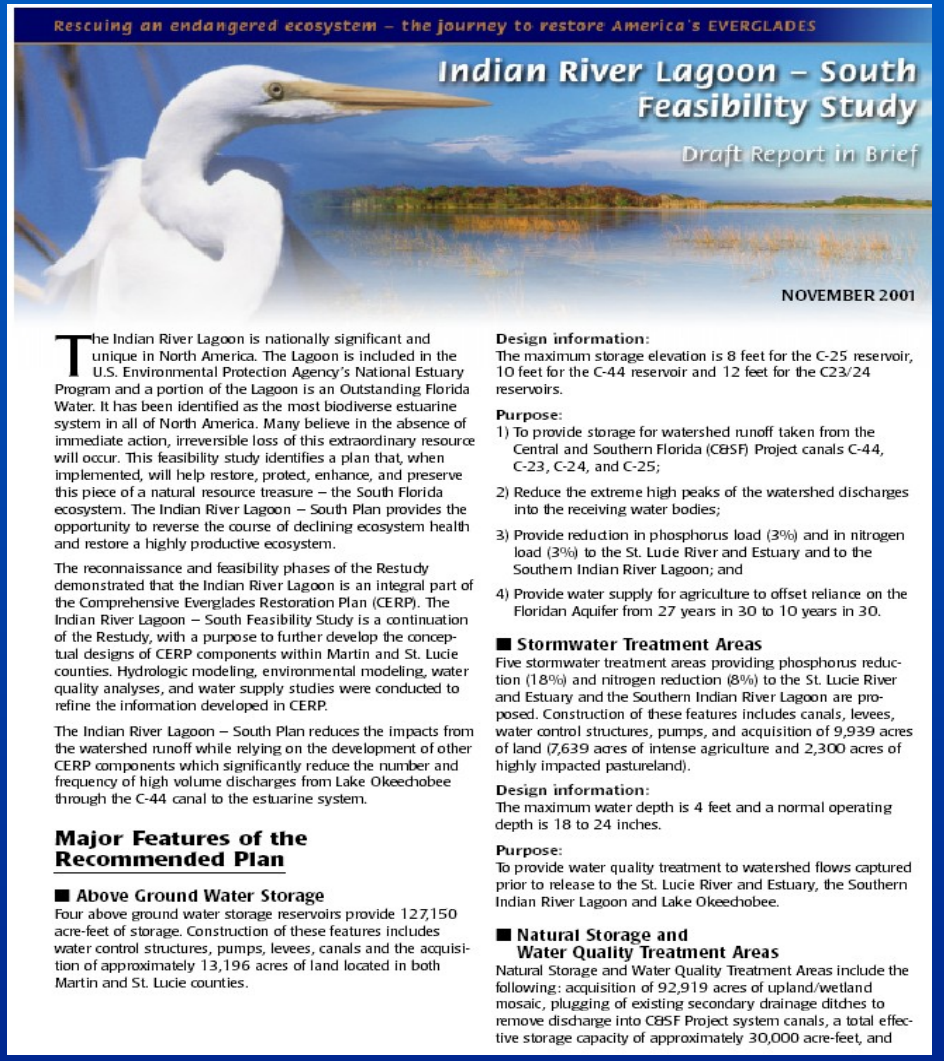
904-232-2235


Rescuing an Endangered Ecosystem:
The Plan to Restore America's Everglades
The Central and Southern Florida Project
Comprehensive Review Study
July 1999

Outreach is More than Just Public Meetings…

Public Information

- Public Meetings
- Publications and Presentations
- Media Relations



Rescuing an endangered ecosystem – the journey to restore America's EVERGLADES

Indian River Lagoon – South Feasibility Study

Draft Report in Brief

NOVEMBER 2001

The Indian River Lagoon is nationally significant and unique in North America. The Lagoon is included in the U.S. Environmental Protection Agency's National Estuary Program and a portion of the Lagoon is an Outstanding Florida Water. It has been identified as the most biodiverse estuarine system in all of North America. Many believe in the absence of immediate action, irreversible loss of this extraordinary resource will occur. This feasibility study identifies a plan that, when implemented, will help restore, protect, enhance, and preserve this piece of a natural resource treasure – the South Florida ecosystem. The Indian River Lagoon – South Plan provides the opportunity to reverse the course of declining ecosystem health and restore a highly productive ecosystem.

The reconnaissance and feasibility phases of the Restudy demonstrated that the Indian River Lagoon is an integral part of the Comprehensive Everglades Restoration Plan (CERP). The Indian River Lagoon – South Feasibility Study is a continuation of the Restudy, with a purpose to further develop the conceptual designs of CERP components within Martin and St. Lucie counties. Hydrologic modeling, environmental modeling, water quality analyses, and water supply studies were conducted to refine the information developed in CERP.

The Indian River Lagoon – South Plan reduces the impacts from the watershed runoff while relying on the development of other CERP components which significantly reduce the number and frequency of high volume discharges from Lake Okeechobee through the C-44 canal to the estuarine system.

Major Features of the Recommended Plan

■ Above Ground Water Storage

Four above ground water storage reservoirs provide 127,150 acre-feet of storage. Construction of these features includes water control structures, pumps, levees, canals and the acquisition of approximately 13,196 acres of land located in both Martin and St. Lucie counties.

Design information:
The maximum storage elevation is 8 feet for the C-25 reservoir, 10 feet for the C-44 reservoir and 12 feet for the C23/24 reservoirs.

Purpose:
1) To provide storage for watershed runoff taken from the Central and Southern Florida (C&SF) Project canals C-44, C-23, C-24, and C-25;

2) Reduce the extreme high peaks of the watershed discharges into the receiving water bodies;

3) Provide reduction in phosphorus load (3%) and in nitrogen load (3%) to the St. Lucie River and Estuary and to the Southern Indian River Lagoon; and

4) Provide water supply for agriculture to offset reliance on the Floridan Aquifer from 27 years in 30 to 10 years in 30.

■ Stormwater Treatment Areas

Five stormwater treatment areas providing phosphorus reduction (18%) and nitrogen reduction (8%) to the St. Lucie River and Estuary and the Southern Indian River Lagoon are proposed. Construction of these features includes canals, levees, water control structures, pumps, and acquisition of 9,939 acres of land (7,639 acres of intense agriculture and 2,300 acres of highly impacted pastureland).

Design information:
The maximum water depth is 4 feet and a normal operating depth is 18 to 24 inches.

Purpose:
To provide water quality treatment to watershed flows captured prior to release to the St. Lucie River and Estuary, the Southern Indian River Lagoon and Lake Okeechobee.

■ Natural Storage and Water Quality Treatment Areas

Natural Storage and Water Quality Treatment Areas include the following: acquisition of 92,919 acres of upland/wetland mosaic, plugging of existing secondary drainage ditches to remove discharge into C&SF Project system canals, a total effective storage capacity of approximately 30,000 acre-feet, and

Public Involvement

- Identify target audiences
- Identify/address existing and new issues
- Hold meetings
- Build community relations

WRDA 2000
Outreach and Assistance Provisions

Provide Outreach and Education to:

- People with limited English proficiency
- Socially and economically disadvantaged people and communities

Consider Project Impacts on:

- Socially and economically disadvantaged people and communities
- People with limited English proficiency

Provide Opportunities to Review and Comment

Outreach to Minority and Economically and Socially Disadvantaged Communities

- Engage key community leaders, activists and opinion leaders
- Identify and address existing and new issues
- Hold meetings
- Prepare appropriate information products

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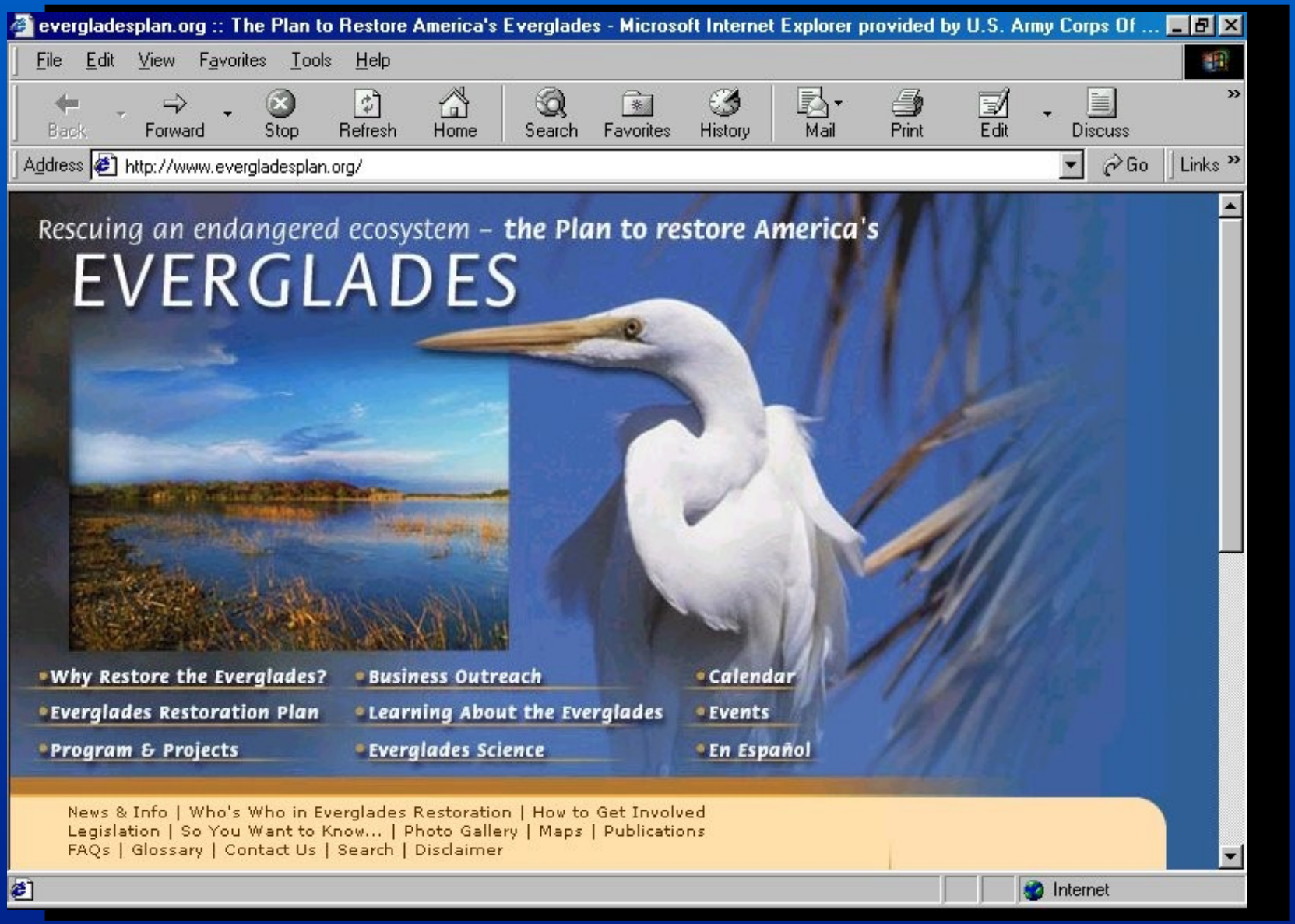
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Some Fundamental Truths…

- Coordination alone is not good enough anymore
- Process is important
- You can never be too inclusive
- It’s better to do it right the first time, rather than to do it over and over again

Questions
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